

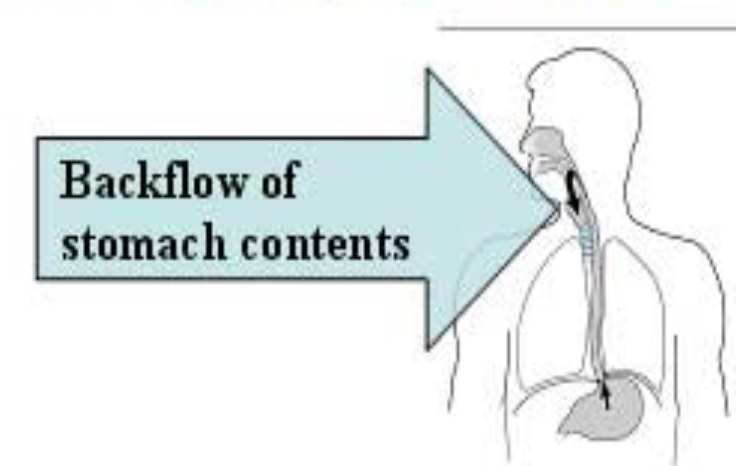
# Laryngopharyngeal Reflux Disease and the Singer

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## What is LPR?

Otolaryngologists are just now beginning to recognize the role reflux has in otolaryngologic disease. Laryngopharyngeal reflux disease (LPR) is a sub-class of Gastro esophageal reflux disease (GERD), which is defined as symptoms and/or signs of esophageal or adjacent organ injury, secondary to the reflux of gastric contents into the esophagus or beyond into the oral cavity or airways. LPR is classified based on organ damage extending up into the larynx and voice box.

LPR - Supraesophageal Reflux, 1968



## Exacerbating Factors

### Decrease LES Pressure:

- Food (fats, chocolate, caffeine onions)
- Alcohol
- Smoking
- Medications (Nitrates, progesterone, Diazepam)

LES= lower esophageal sphincter

### Mucosal Irritants:

- Food and Drinks (citrus products, spicy food, soda)
- Medications (Aspirin, NSAIDs, Iron Salts)

## Extra-Esophageal Symptoms

Common symptoms of Laryngopharyngeal Reflux include:

- Morning hoarseness
- Halitosis
- Excessive phlegm/frequent throat clearing
- Dry mouth
- Chronic cough
- Regurgitation of gastric contents
- Poorly controlled asthma
- Dyspepsia/pyrosis (discomfort/heartburn)
- Prolonged vocal warm-up (20-30 minutes)

## Pathophysiology: Why Singers?

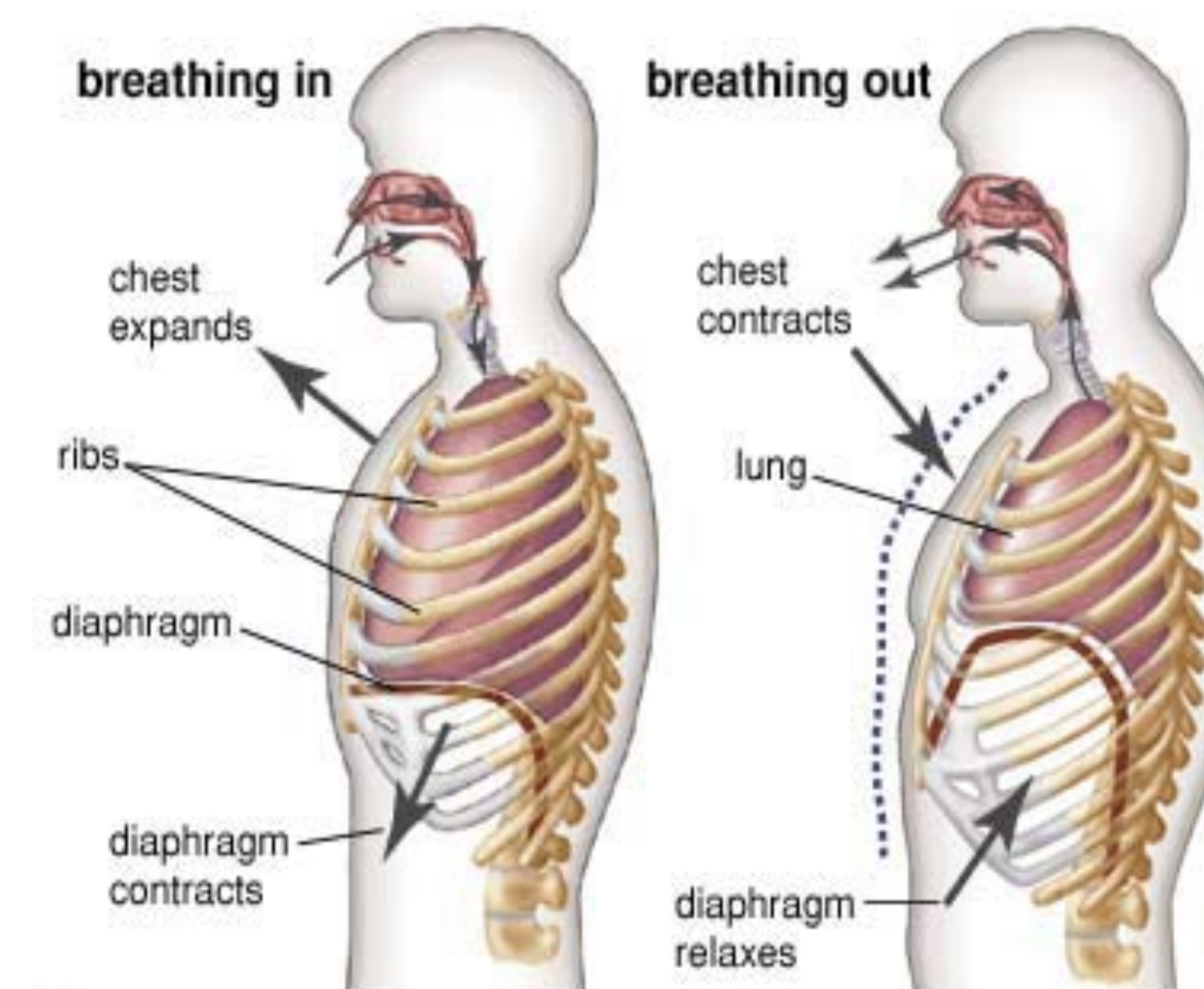
### Diaphragmatic Breathing

Singing is an athletic process. The singing mechanism involves support created by forceful compression of the abdominal muscles, so as to allow room for the expansion of the ribcage. This action compresses the stomach and works against the LES.

### Lifestyle

- Singers will not eat before a performance because singing on a full stomach exacerbates reflux. This leads to many late-night meals directly before bed.
- Stresses of a performing career, stress often being associated with an increased production of gastric acid.
- Inability/choosing not to maintain a healthy diet.

Because singers place great demands on their voice, they are particularly sensitive to even the slightest change in caused by peptic mucositis in the larynx.



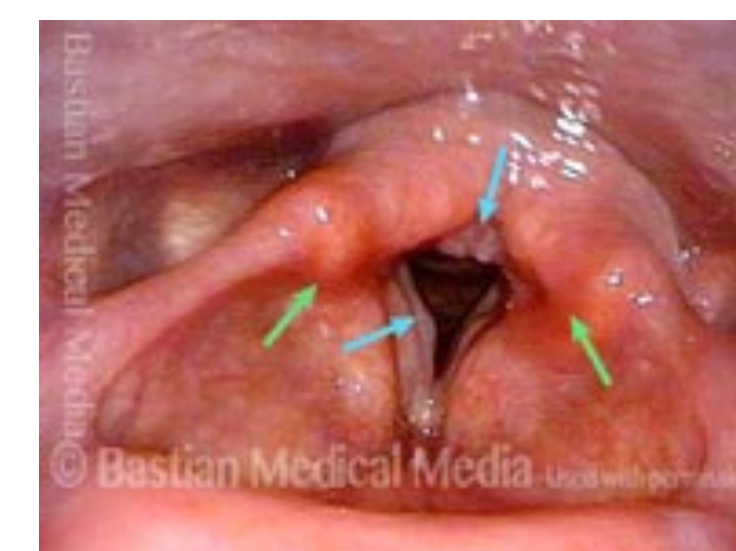
### Vocal Fold Pathology

- Severe coughing
- Vocal fold hemorrhage
- Mucosal tear
- Aspiration and pulmonary obstruction
  - Vocal nodules as a result of overuse or misuse of the voice as a method of compensation

## Posterior Laryngitis and Other Conditions



**Acid Reflux, laryngeal**  
White mucus sometimes suggestive of acid reflux laryngitis



**Acid Reflux Laryngitis**  
Interarytenoid pachyderma, arytenoid redness, and mucus retention cyst



**Healthy Vocal Folds**



**Mucosal Edema**  
In this pre-phonatory phase of vibration, notice that the dark space between the folds is uneven, indicating swelling

## Treatment and Management of LPR

### Lifestyle Modifications

- Elevation of head of bed (6 inches)
- Don't eat prior to sleeping (2 hrs)
- Avoid carminatives
- Decrease/stop smoking
- Dietary Modifications
  - Low fat, high protein
  - Avoid irritants

### Medications

Helpful:

- H<sub>2</sub>-Receptor Antagonists
- Prokinetic Agents
- Proton Pump Inhibitors

Harmful:

- Those that Decrease LES pressure and/or cause esophageal damage.

### Indications for Surgery

- Persistent symptomology in spite of medical management, usually due to intolerance to medication
- Barrett's Metaplasia, stricture ulceration, and issues requiring long-term therapy



